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UNITED STATES PATENT AND TRADEMARK OFFICE and

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID E. SIMMEN

Appeal 2008-006140
Application 09/669,556
Technology Center 2100

Before JOSEPH L. DIXON, LANCE LEONARD BARRY, and
JAY P. LUCAS, *Administrative Patent Judges*.

DIXON, *Administrative Patent Judge*.

DECISION ON APPEAL¹

I. STATEMENT OF THE CASE

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

The Patent Examiner rejected claims 1, 3-11, 13-21, and 23-30. The Appellant appeals therefrom under 35 U.S.C. § 134(a). We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

A. INVENTION

The invention at issue on appeal relates “in general to database management systems performed by computers, and in particular, to a query optimization technique for obtaining improved cardinality estimates using statistics on automatic summary tables.” (Spec. 1.)

Appellant further describes their invention as:

a technique is provided for optimizing execution of a query that accesses data stored on a data store connected to a computer. Statistics on one or more automatic summary tables are used to determine an optimal query execution plan for the query. In particular, improved cardinality estimates are generated for one or more query execution plans for the query using statistics of one or more automatic summary tables that vertically overlap the query. These cardinality estimates are used to make more accurate cost estimates, thus improving the likelihood of determining the optimal query execution plan.

(Spec. 3.)

B. ILLUSTRATIVE CLAIM

Claim 1, which further illustrates the invention, follows.

1. A method of optimizing execution of a query that accesses data stored on a data store connected to a computer, comprising:

generating cardinality estimates for one or more query execution plans for the query using statistics of one or more automatic summary tables that vertically overlap the query;

using the generated cardinality estimates to determine an optimal query execution plan for the query; and

executing the optimal query execution plan for the query in order to access the data stored on the data store connected to a computer and then output[] the accessed data.

C. REFERENCES

The Examiner relies on the following references as evidence:

Bello	US 6,496,819 B1	Dec. 17, 2002 (filed Dec. 29, 1998)
Zaharioudakis	US 2003/0088558 A1	May 8, 2003

D. REJECTIONS

Claims 1, 3-4, 11, 13-14, 21, and 23-24 stand rejected under 35 U.S.C. 102(e) as being anticipated by Zaharioudakis.

Claims 5-10, 15-20, 25-30 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Zaharioudakis in view of Bello.

II. ISSUE

Has the Examiner set forth a proper rejection based on the anticipation? Specifically, is Zaharioudakis a proper prior art reference under 35 U.S.C. § 102 and contain a sufficient disclosure under 35 U.S.C. § 112, first paragraph?

III. PRINCIPLES OF LAW

35 U.S.C. § 102

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Analysis of whether a claim is patentable over the prior art under 35 U.S.C. § 102 begins with a determination of the scope of the claim. We determine the scope of the claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). The properly interpreted claim must then be compared with the prior art.

“It is well settled that a prior art reference may anticipate when the claim limitations not expressly found in that reference are nonetheless inherent in it. Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates.” *In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1349 (Fed. Cir. 2002) (citations and internal quotation marks omitted). “Inherency, however, may not be established by probabilities or possibilities. The mere

fact that a certain thing may result from a given set of circumstances is not sufficient." *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (citations and internal quotation marks omitted).

35 U.S.C. § 103

Obviousness requires that all limitations be taught or suggested by the reference or references. 35 U.S.C. § 103(a).

VI. ANALYSIS

Appellant's main contention is that Zaharioudakis is not a valid prior art reference due to the lack of compliance with 35 U.S.C. § 112, first paragraph, of its priority document (provisional application serial number 60/135,133, filed on May 20, 1999). (App. Br. 5-6). Appellant further argues that the Examiner is improperly introducing a new ground of rejection based upon provisional application by referencing portions thereof in an Advisory Action. (App. Br. 7). Here, we find the Examiner's late reliance upon the teachings of Zaharioudakis in the final rejection (due to Appellant's claim amendments) to be proper, and we find the priority document to be properly identified on the face of the Zaharioudakis patent where Appellant could have found the relevant dates of Zaharioudakis, and evaluated the propriety of Zaharioudakis. Therefore, we find Appellant's argument of a new ground of rejection unpersuasive.

Appellant argues that there is a "lack of identity" between paragraph [0043] of Zaharioudakis and the cited portions of provisional application serial number 60/135,133. Appellant argues that since paragraph [0043] of

Zaharioudakis cannot be found, then Zaharioudakis is not entitled to the filing date of the provisional application or any date earlier than of November 5, 2002. (App. Br. 9). We disagree with Appellant, and find that a determination of a "lack of identity" is not an appropriate test and is not an 'ipsissimis verbis' test for support. We find adequate support in the identified portions of the priority document for those portions relied upon by the Examiner to support paragraphs [0031], [0041], and [0043] of Zaharioudakis.

Appellant maintains that paragraphs [0031], [0041], and [0043] of Zaharioudakis contain no discussion of "generating cardinality estimates for query execution plans for the query using statistics of automatic summary tables that vertically overlap the query." (App. Br. 9). Appellant maintains that nowhere do paragraphs [0031], [0041], and [0043] of Zaharioudakis describe maintaining "such statistics" were using "such statistics" to optimize queries. (App. Br. 9-10). Here, we find Appellant's argument is unpersuasive wherein the structure of the automatic summary tables and the vertical overlap thereof in the query are only inferentially recited to describe Appellant's "such statistics." Furthermore, as Appellant has argued the limitation, the description of the statistics is further deemed to be non-functional descriptive material since that it does not affirmatively identify any structure of the data, but only impliedly modifies statistics.

We disagree with Appellant's contention and find that Appellant's claim language does not specifically identify any details of the statistics or the use thereof in the step of generating cardinality estimates for one or more query estimation plans for the query using statistics. We find that the relied upon teachings of Zaharioudakis as discussed at pages 9-10 of the Answer to

meet the disputed claim language. Appellant sets forth no arguments in the Reply Brief for independent claim for 1, 11, and 21. Since we find no persuasive arguments of error in the Examiner's reasoned conclusion of anticipation, we sustain the rejection of independent claim 1. Since Appellant elected to group independent claims 11 and 21 with independent claim 1 and Appellant has set forth no separate arguments for patentability, we sustain rejection of independent claims 11 and 21.

With respect to dependent claim 3, Appellant contends that paragraph [0041] of Zaharioudakis "says nothing about . . ." and repeats the language of independent claim 1 and dependent claim 3. We find Appellant's contention to fall short of an argument which specifically identifies differences between the prior art and the claimed invention. Therefore, we find Appellant's contention to be unpersuasive of error in the Examiner's reasoned conclusion of anticipation, and we will sustain the rejection of representative dependent claim 3 and claims 13 and 23 group therewith.

With respect to dependent claims 4, 14, and 24, Appellant relies on the same argument advanced with respect to claim 3 which we found unpersuasive, and we sustain rejection of these claims.

35 U.S.C. § 103

With respect to dependent claim 5, Appellant again reiterates the argument that Zaharioudakis is not a prior art reference. Since we did not find Appellant's argument above persuasive, we again do not find it persuasive.

Appellant further argues that "the query reduction factor is not the same as the selectivity estimate, which comprises a ratio of the cardinality of

the automatic summary table to the product of cardinalities of base tables referenced in the automatic summary table and the query. Instead, these are completely different values." (Reply Br. 3).

We agree with Appellant and find that the Examiner has not shown that Bello teaches this claimed limitation as asserted at pages 5 and 10-12 of the Answer. Therefore, we cannot sustain the Examiner's rejection of dependent claim 5 and corresponding claims 15 and 25.

With respect to dependent claim 6, the Appellant merely repeats the language of dependent claim 6 and maintains that neither Zaharioudakis nor Bello disclosed is limitations (App. Br. 12-13; Reply Br. 3-4). Appellant argues that the Examiner's newly cited portions of Bello "does not include a determination whether zero or more predicates of the query are applied by one of the automatic summary tables and the remaining predicates of the query are eligible to be applied on the automatic summary table. Instead, these are completely different determinations." (Reply Br. 4). Appellant's argument is not commensurate with the scope of the language of dependent claim 6 wherein there is no "determination" made. Furthermore, the language of dependent claim 6 merely states "wherein zero or more predicate acts of the query are applied to one of the automatic summary tables . . . " and this language is met when no predicates of the query are applied to the automatic summary table and the remaining predicates are applied. Therefore, we find Appellant's argument to be unpersuasive of the error in the Examiner's reasoned conclusion of obviousness, and we will sustain rejection of dependent claim 6 and dependent claim 16 and 26 which are grouped therewith by Appellant since no separate arguments for patentability have been presented.

With respect to dependent claims 7, 17, and 27, Appellant repeats the claim language and states that the claims stand or fall with claim 6. Since we did not find the arguments for dependent claim 6 to be persuasive, we sustain the rejection of dependent claims 7, 17, and 27.

With respect to dependent claim 8, Appellant merely repeats the language of the claim and maintains that nothing in the cited portion of Bello teaches or suggests the claimed limitation (App. Br. 13; Reply Br. 5), but Appellant does not specifically identify any error in the Examiner's reasoned conclusion of obviousness. Therefore, we will sustain the rejection of representative dependent claim 8 and claims 18 and 28 group therewith.

With respect to dependent claims 9 and 10, as discussed previously with respect to dependent claim 5, we find the teachings of Bello as discussed at pages 12-13 of the Answer to fall short of the required showing for obviousness of the claimed invention for this claim limitation. We cannot sustain the Examiner's proffered rejection since we do not find teachings or fair suggestions of the claimed invention. Therefore, we cannot sustain the rejection of claims 9, 10, 19, 20, 29, and 30.

V. CONCLUSION

For the aforementioned reasons, Appellant has shown error in the Examiner's obviousness rejection of claims 5, 9, 10, 15, 19, 20, 25, 29, and 30, but not shown error in the remainder of the anticipation and obviousness rejections.

VI. ORDER

We affirm the anticipation rejection of claims 1, 3, 4, 11, 13, 14, 21, 23, and 24. We affirm the obviousness rejections of claims 6, 7, 8, 16, 17, 18, 26, 27, and 28. We reverse the obviousness rejections of claims 5, 9, 10, 15, 19, 20, 25, 29, and 30.

AFFIRMED-IN-PART

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